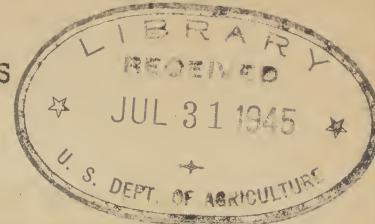


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1943 ANNUAL REPORT OF THE POULTRY COORDINATORS
on the work of
THE NATIONAL POULTRY IMPROVEMENT PLAN



cop. 5

Each year since the National Poultry Improvement Plan became operative the coordinators have presented at the annual conference a report of the progress made during the year. Along with this report tabulated participation data have been included in the mimeographed proceedings of the conference.

Due to war-time restrictions on travel, it was considered inappropriate to hold a National Poultry Improvement Plan conference this year, but it was felt nevertheless that a brief report for the year 1942-43 should be prepared. It is believed that the cooperating official State agencies, participants, and others interested on organized poultry-improvement, should be apprised of the progress and accomplishments of the plan.

With the nation at war, special emphasis has been placed on gearing the plan to the War-Food program. Egg and poultry meat production is approaching a limit imposed by available feed, labor, and equipment, and it is, therefore, especially important that the efficiency of production be increased to meet current needs. It is estimated by the Bureau of Agricultural Economics that 84 percent of the chicks raised on farms in the United States are produced in hatcheries. Thus, a program, such as the National Poultry Improvement Plan, that obtains the cooperation of hatcherymen and hatchery supply flock owners affords one of the most effective means of improving the efficiency of farm poultry flocks.

In addition to obtaining cooperation in following the basic provisions of the plan, during the war an added effort has been made to increase the efficiency of production through special campaigns.

The Victory Cockerel Campaign emphasizes the importance of using the best available production-bred males for heading hatchery supply flocks. A survey in 23 States where adequate reports were available showed that 18.8 percent of the birds supplying eggs to National Poultry Improvement Plan hatcheries were mated to Victory Cockerels during the spring of 1943. Eight of the 23 States had from 61 percent to 93 percent of all participating flocks headed by such males. The use of Victory Cockerels will be much greater in 1944, and thus the breeding of the average chick available to farmers will be improved. Victory Cockerels are U.S. Certified or better official grade, or cockerels of equivalent private records. They are at least sired by U.S.R.O.P. males or by private-record males from dams laying 200 or more standard-sized eggs. The records show that pullets entered in U.S.R.O.P. (the sisters of U.S.R.O.P. males) are definitely superior to average farm chickens in egg-laying ability. The records of 65,683 pedigree R.O.P. candidates show a hen-housed average production of 176 eggs in 1941-42, as compared to an average farm production of 113 eggs per layer for 1942.

The early selection of prospective breeding cockerels has been a special project of many of the official State agencies during the past two years. This contributes to the meat-production program as the cockerels are selected for such utility factors as rapid feathering, rapid growth,

and good body type at broiler age or earlier. In Virginia alone, approximately 20,000 prospective breeding cockerels are selected annually at 8 to 12 weeks of age. These cockerels are identified at the time of selection and reselected at maturity.

The coordinators, State supervisors, and participants of the plan cooperated in the Poultry Conservation for Victory program, a war-time project to increase the efficiency of production through reducing mortality. Suggestions were made in the preparation of the booklets published and distributed by the National Poultry Advisory Council. A discussion of the program was included at most of the training schools for flock-selecting and pullorum-testing agents. Many of the official State agencies cooperated in the distribution of the booklets and otherwise urged the adoption of the practices recommended.

Emergency Executive Committee Meeting

In order to conserve travel and expense, it was decided at the last annual conference on the plan held at Chicago in June 1942, that it would likely not be possible to hold any more such conferences for the duration of the war. An Emergency Executive Committee, consisting of six representatives from different sections of the country, was elected to represent the official State agencies and participating industry members during the war emergency or until another conference could be held.

This committee met with representatives of the Bureau in Washington, D.C., in June 1943, and made several changes in the plan; the most important of which was in clarification of the use of the term R.O.P. in the advertising of participating hatcheries. This action was necessary due to a decision of the United States Circuit Court of Appeals, Tenth Circuit (No. 2582 - January Term, 1943). In the course of the opinion, the following language appears:

"An R.O.P. operator is one who belongs to the Association, subscribes to its rules, and produces eggs and chickens under its rules and regulations. An R.O.P. chicken is one produced and maintained by an R.O.P. operator. When it leaves an R.O.P. operator's pens, it ceases to be an R.O.P. chicken."

A footnote to the opinion states that -

"R.O.P. is an abbreviation of U. S. Record of Performance. It represents a program of the National Poultry Improvement Plan for the improvement of poultry produced in hatcheries. It is administered through state agencies by the Bureau of Animal Industry of the U. S. Department of Agriculture. Members of the Association are called R.O.P. operators and chickens produced and maintained by such an operator under the rules and regulations of the Association are R.O.P. stock. They cease to be R.O.P. stock when they leave the pens of an R.O.P. operator or when he quits the Association."

The changes made in relation to this decision provide that participants in the plan may use the terms "R.O.P. sired," "R.O.P. pedigree sired," "R.O.P. mated," and other terms of similar meaning or implication under certain specified conditions. The males referred to must be R.O.P. leg-banded, the advertiser must show the breeds and the approximate percentage of the birds in the matings of each breed that are of that quality. The changes made by the Emergency Executive Committee and those made at the 1942 conference have been incorporated into one printed supplement to Miscellaneous Publication No. 300.

Hatchery and Hatchery Supply Flock Participation

Participation in the plan continued to increase, as is shown in the tables on the following pages. A desire to produce quality chicks that will produce more eggs at less cost per dozen is evidenced through the increased use of males of superior breeding. Interest in decreasing the incidence of pullorum disease through lowered tolerances and multiple testing is becoming more widespread. Thus, the objectives of the plan are being achieved.

In table 1, Hatchery participation by States, 26 States are shown to have an increase in hatchery capacity participation in 1942-43 over the previous year, ranging from 0.67 percent in Kentucky to 58.51 percent increase in New York. For the 44 States in the plan, there was an increase of 62 hatcheries and 13,684,655 in egg capacity, or 10.08 percent.

An estimate was obtained from the Bureau of Agricultural Economics, U. S. Department of Agriculture, of the total hatchery egg capacity by States. The egg capacity of participating hatcheries was then compared in table 2. This table shows that 34.4 percent of the total estimated capacity of the 44 States are operating under the plan. It ranges from a low of 3.3 percent in Nebraska to a high of 98.2 percent in North Dakota, where all hatcheries are required either to participate in the plan or to have their supply flocks officially tested. The highest percentage participation is in North Dakota, Alabama, Arizona, Louisiana, and Maine -- States in widely different sections of the country.

As shown in table 3, there was a decrease of 112 in the number of flocks, but there was an increase of 1,015,491 birds participating, or 6.5 percent. This means that the average size of the flocks was larger and this has been the trend the past three years. As an average, the largest flocks are in New Hampshire, Massachusetts, and Connecticut. The smallest flocks are in Louisiana, Mississippi, and Tennessee. The data showing the average size of flocks by years are shown in the last column of table 8.

Table 4 is one that has not been included in former reports. It shows the estimated number of birds required to supply the participating hatcheries in each State and compares this with the actual number of birds in participating flocks. If the percentage in the last column is less than 100, the indications are that hatching eggs are imported into the State; but if the percentage is more than 100, the indications are that the State exports hatching eggs.

The Southern States, with a few exceptions, import large quantities of hatching eggs to supply their hatcheries operating under the plan. Their rapidly expanding hatchery industry has developed faster than their supply flocks. The Middle-West and certain States in the New England group export large quantities of hatching eggs. For the country as a whole, the number of birds was 11 percent greater than the estimated required number to supply participating hatcheries.

This year, for the first time, an attempt was made to obtain information on the use of males of improved breeding to head hatchery supply flocks. It was well known that many of the U.S. Approved flocks were headed by U.S.R.O.P., U.S. Certified, and privately pedigreed males, but no records were available to show to what extent this practice was followed. This item was added to N.P.I.P. Form 3, Flock-Selecting and Pullorum-Testing Report, and to the schedule for reporting participation. The reports received are summarized in table 5. Reports were received from only 23 of the States. In some of the States reporting, the figures do not include nearly all of the flocks where males of improved breeding were used as the data were not available. The table does show, however, how much interest there is by the hatcheries in some States in improving the breeding qualities of their supply flocks. It is hoped that next year data on the use of males of improved breeding will be collected by all States.

The number of hatcheries, with total egg capacity, number of flocks, and number of birds, classified according to breeding stages and pullorum classes, are reported in table 6. It will be noted that in eight States hatcheries operated as U.S. Approved and in three States hatcheries operated as U.S. Certified that were not participating in any of the pullorum classes. According to General Regulation 18, adopted at the 1941 conference, beginning September 1, 1943, participation in one of the pullorum-control and eradication classes of the plan became a prerequisite to participation in any of the breeding stages. There were ten States in which hatcheries operated under a pullorum class that were not participating in a breeding stage.

Table 7 classifies hatcheries and flocks by years on a basis of breeding stages. It shows that in each of the past three years there has been a decline in hatcheries and flocks participating in a pullorum class only without, at the same time, participating in a breeding stage. The U.S. Verified stage was deleted from the plan at the close of the 1941-42 year and, therefore, the space under the heading has been left blank for 1942-43.

In table 8, the total participation by years is listed and well illustrates the steady growth during the eight years. From 1,017 hatcheries in 1935-36, with a capacity of 38,066,000 eggs, it increased to 2,729 participating hatcheries with a capacity of 149,426,834 eggs in 1942-43, an increase of 168 percent in number of hatcheries and 292 percent in capacity. From 23,813 participating supply flocks with 3,522,409 birds in 1935-36, it increased to 69,569 flocks with 16,534,458 birds in 1942-43, an increase of 192 percent in flocks and 369 percent in birds.

Table 9 classifies the number of birds in hatchery supply flocks each year by pullorum classes. During the first year of the plan in 1935-36, of all the birds participating in the pullorum phase, 85 percent were U.S. Pullorum-Tested, and at that time there was no maximum tolerance for this class. During the past year, only 43 percent of the birds participating in the pullorum phase were U.S. Pullorum-Tested with a tolerance of less than 8 percent, while 35 percent of all the birds were U.S. Pullorum-Controlled with a tolerance of less than 2 percent, and 22 percent were U.S. Pullorum-Passed and U.S. Pullorum-Clean. Hatcherymen are more and more realizing the need for retesting their flocks until few or no reactors are found.

Three methods of testing chickens for pullorum disease are recognized officially in the National Poultry Improvement Plan, namely: The standard tube agglutination test; the stained-antigen, rapid, whole-blood test; and the rapid serum test. In three States all of the methods are being used, but in most states either the whole-blood method or the standard tube method has been adopted as official. During the 1942-43 year, 27 States used the whole-blood method only, while in 9 States the standard tube was the only method recognized. In 5 States, both the whole-blood method and standard tube were used officially. This is shown in table 10 for each of the past six years, and it will be noted that there has been little variation from year to year.

U. S. Record of Performance Participation

Two more States had breeders who trap-nested birds under record-of-performance supervision work the past year, making a total of 42 States that are now participating in this breeding stage of the plan. Alabama had 23 U.S.R.O.P. breeders, more than any other State, but Indiana and Massachusetts had the largest number of candidates entered and largest number of birds qualified. Record-of-performance participation is tabulated by States in table 11 and by years in table 13.

Over 3,200 U.S.R.O.P. breeding pens were available for the production of individually pedigreed hatching eggs and chicks during the spring of 1943. Many of the large R.O.P. breeders sexed their chicks and were thus able to sell U.S.R.O.P. cockerel chicks and keep the pullet chicks for their own use. Some hatcheries purchased large numbers of these R.O.P. cockerel chicks for males to head their supply flocks the next year. In some States the demand exceeded the supply and U.S.R.O.P. breeders were not able to fill all the orders, which illustrates the increased interest in the use of better breeding stock for flock-improvement purposes.

The White Leghorns still outnumber all other breeds and varieties combined in the number of candidates entered in R.O.P., the number of birds qualified, and the number of birds in U.S.R.O.P. breeding pens. Of the 151,685 candidates entered in the fall of 1942, 77,615, or 51.2 percent, were White Leghorns. The previous year 53.0 percent of all birds entered were White Leghorns. The Rhode Island Reds had the next largest number of candidates, followed in order by the White Plymouth Rocks, New Hampshires, Barred Plymouth Rocks, and White Wyandottes. The New Hampshires have gained

in number and there were 17,454 entered as candidates, which is 11.5 percent of all birds entered. The year before there were 14,556 New Hampshire candidates, or 9.1 percent of all birds entered. Table 12 shows the distribution by breeds and varieties.

It has been recommended that an R.O.P. breeder should enter at least 400 candidates of each breed in order to get records on and test a sufficient number of families. From table 14, which is a distribution of U.S.R.O.P. flocks according to the number of candidates entered, only 27.4 percent of the flocks would meet this recommendation in 1942-43 as compared to 31.7 percent in 1941-42. This may be accounted for in part by the shortage of labor for trap-nesting a larger number of candidates.

Another suggestion has been that a breeder should establish 8 or more single-male breeding pens for each breed, since a relatively large number of matings is necessary for progress in family selection. From table 15 it will be seen that only 42.1 percent of the U.S.R.O.P. flocks had 8 or more U.S.R.O.P. matings the past year. This is an improvement, however, over the year before, as in 1941-42 there were only 35.7 percent of the flocks that had 8 or more U.S.R.O.P. matings. Only 729, or 22.3 percent, of the 3,261 breeding pens were on farms where fewer than 8 single-male matings were maintained, thus more than three-fourths of the R.O.P. products are produced on farms having 8 or more single-male matings.

Five and Six-Day-A-Week Trap-Nesting

During the 1942-43 trap-nest record year, for the first time R.O.P. breeders were permitted to trap-nest 5 and 6 days a week. It has been determined that these records are for all practical purposes as accurate as daily trap-nest records. The 6-day-a-week record is converted to the official record by multiplying the number of eggs trap-nested by seven-sixths. The 5-day-a-week records are multiplied by seven-fifths.

The number and percentage of flocks trap-nested 5, 6, or 7 days a week are shown in table 16. It will be noted that this 5-and-6 day labor-saving trap-nesting procedure has been adopted by 10⁴ breeders.

U. S. Register of Merit Participation

Each year there has been an increase in the number of birds qualifying for U. S. Register of Merit. According to the data in table 17, R.O.P. breeders of five States had only 36 sires and 144 dams that qualified as U.S.R.O.M. in 1935-36, while in 1941-42 there were 420 sires and 2,483 dams in 32 States that qualified.

Each year an increasing number of breeders submit their production reports for U.S.R.O.M. analysis, which largely accounts for the increasing number of U.S.R.O.M. sires and dams. For the 1941-42 trap-nest record year, reports for 148 breeders and 181 flocks were submitted to the Bureau for analysis by the R.O.P. supervisors of 34 States. The number of reports submitted, the number of breeders with U.S.R.O.M. birds, and the number of

U.S.R.O.M. birds by States, are shown in table 18.

The hen-housed average egg production of the pedigreed candidates has also increased from 164 in 1939-40 to 171 in 1940-41, and 176 in 1941-42. Each year the daughters of U.S.R.O.M. sires average about 198 eggs and the daughters of U.S.R.O.M. dams average about 207 eggs. These data are shown in table 19.

Use of N.P.I.P. Record Forms

In cooperation with the committee on record forms, we have constantly endeavored to improve, and simplify wherever possible, the record forms that are used in the work of the plan. The number of N.P.I.P. record forms distributed during the 1943 fiscal year was 232,498 as compared to 224,258 the previous year. Suggestions from the field on how these forms can be improved are always gratefully received.

Changes in Personnel

Fortunately, we have been able to maintain a staff for the Federal administration of the plan with relatively few changes during the year. Mr. Melvin Buster transferred to the Food Distribution Administration of the Department February 15, 1943, but the position was filled April 1 through the appointment of Mr. Arthur Gannon of Georgia.

Turkey Improvement Program Adopted

At this year's annual meeting of the National Turkey Federation, a plan for the improvement of turkeys was adopted and the Bureau was requested to include this as a part of the National Poultry Improvement Plan. The turkey plan was approved by the Secretary of Agriculture on September 25, 1943. It may be adopted in any State by amending the existing Memorandum of Agreement covering the cooperative work of the National Poultry Improvement Plan.

Outlook for the Future

Poultry breeders and hatcherymen experienced an unprecedented demand for chicks in 1943. There might be a tendency for some hatcherymen to relax their poultry-improvement efforts with the thought that chicks will sell, regardless of quality. On the contrary, we have found that breeders and hatcherymen generally seem to be determined to produce better chicks in 1944, despite difficulties arising from the war. Official State agencies, likewise, are interested in improving the work of the plan in their respective States. There is every indication that the plan will continue to grow, and that through the cooperative program the farm poultry raiser will be supplied with better chicks.

Table 1 -- Hatchery participation by States, 1942-43 compared with 1941-42, and percentage increase or decrease in egg capacity

State	Participating hatcheries				Percent increase or decrease	
	1941-42		1942-43			
	Number	Egg capacity	Number	Egg capacity		
Alabama	92	2,843,108	87	2,813,214	- 1.05	
Arizona	19	663,618	19	722,198	+ 8.83	
Arkansas	49	2,105,924	46	2,016,434	- 4.25	
Colorado	20	1,525,500	18	1,179,040	- 22.71	
Connecticut	112	5,424,933	112	4,190,986	- 22.75	
Delaware	6	780,000	3	383,000	- 50.90	
Florida	47	1,106,172	52	1,398,922	+ 26.46	
Georgia	46	3,023,339	52	4,458,088	+ 47.46	
Idaho	26	864,560	26	967,430	+ 11.90	
Illinois	125	11,047,197	153	13,340,465	+ 20.76	
Indiana	142	11,443,208	155	13,854,944	+ 20.90	
Iowa	75	6,526,100	69	6,399,080	- 1.95	
Kansas	95	4,725,918	93	5,044,873	+ 6.75	
Kentucky	58	3,043,983	61	3,064,338	+ 0.67	
Louisiana	43	1,092,730	54	1,114,650	+ 2.01	
Maine	135	1,494,161	125	1,614,455	+ 8.05	
Maryland	48	4,680,560	43	4,584,260	- 2.06	
Massachusetts	207	3,089,980	174	2,886,431	- 6.59	
Michigan	42	2,379,400	45	2,731,600	+ 14.80	
Minnesota	129	10,162,000	139	12,099,972	+ 19.07	
Mississippi	32	1,337,082	36	1,307,360	- 2.22	
Missouri	82	6,536,440	86	7,075,180	+ 8.24	
Nebraska	10	409,326	8	545,300	+ 33.22	
New Hampshire	120	2,780,234	119	2,750,234	- 1.08	
New Jersey	40	3,089,012	42	3,838,712	+ 24.27	
New Mexico	4	146,000	4	143,000	- 2.05	
New York	71	1,379,435	97	2,186,518	+ 58.51	
North Carolina	110	4,425,978	112	5,241,340	+ 18.42	
North Dakota	46	2,068,688	54	2,857,791	+ 38.15	
Ohio	124	10,647,683	127	11,756,421	+ 10.41	
Oklahoma	77	3,638,220	72	3,875,720	+ 6.52	
Oregon	11	269,900	9	225,500	- 16.45	
Rhode Island	18	239,192	18	219,092	- 8.40	
South Carolina	26	636,904	22	555,508	- 12.78	
South Dakota	33	2,089,600	40	2,490,876	+ 19.20	
Tennessee	42	2,359,246	43	2,154,900	- 8.66	
Texas	69	4,319,932	78	5,167,997	+ 19.63	
Utah	7	416,712	7	311,852	- 25.16	
Vermont	25	300,168	31	309,617	+ 3.14	
Virginia	94	5,972,673	90	6,355,816	+ 6.41	
Washington	26	1,203,500	24	1,107,700	- 7.96	
West Virginia	23	875,900	22	1,191,300	+ 36.02	
Wisconsin	53	2,380,360	56	2,799,580	+ 17.61	
Wyoming	8	197,603	6	95,140	- 51.85	
Total	2,667	135,742,179	2,729	149,426,834	+ 10.08	

Table 2 -- Egg capacity of participating hatcheries compared with estimated egg capacity of all hatcheries, by States, 1942-43

State	Estimated egg capacity all hatcheries*	Egg capacity participating hatcheries	Percentage of total egg capacity participating hatcheries
Alabama	3,101,000	2,813,214	90.7
Arizona	811,000	722,198	89.1
Arkansas	3,465,000	2,016,434	58.2
Colorado	5,064,000	1,179,040	23.3
Connecticut	5,965,000	4,190,986	70.3
Delaware	4,600,000	383,000	8.3
Florida	2,421,000	1,398,922	57.8
Georgia	5,923,000	4,458,088	75.3
Idaho	1,542,000	967,430	62.7
Illinois	38,244,000	13,340,465	34.9
Indiana	33,579,000	13,854,944	41.3
Iowa	41,859,000	6,399,080	15.3
Kansas	19,160,000	5,044,873	26.3
Kentucky	4,051,000	3,064,338	75.6
Louisiana	1,303,000	1,114,650	85.5
Maine	1,979,000	1,614,455	81.6
Maryland	10,535,000	4,584,260	43.5
Massachusetts	7,306,000	2,886,431	39.5
Michigan	14,638,000	2,731,600	18.7
Minnesota	27,945,000	12,099,972	43.3
Mississippi	1,710,000	1,307,360	76.5
Missouri	29,035,000	7,075,180	24.4
Nebraska	16,626,000	545,300	3.3
New Hampshire	4,000,000	2,750,234	68.8
New Jersey	8,011,000	3,838,712	47.9
New Mexico	675,000	143,000	21.2
New York	12,064,000	2,186,518	18.1
North Carolina	7,900,000	5,241,340	74.9
North Dakota	2,910,000	2,857,791	98.2
Ohio	34,030,000	11,756,421	34.6
Oklahoma	10,800,000	3,875,720	35.9
Oregon	5,015,000	225,500	4.5
Rhode Island	753,000	219,092	29.1
South Carolina	1,997,000	555,508	27.8
South Dakota	5,971,000	2,490,876	41.7
Tennessee	4,800,000	2,154,900	44.9
Texas	19,261,000	5,167,997	26.8
Utah	1,618,000	311,852	19.3
Vermont	585,000	309,617	52.9
Virginia	12,516,000	6,355,816	50.8
Washington	5,904,000	1,107,700	18.8
West Virginia	1,649,000	1,191,300	72.2
Wisconsin	13,499,000	2,799,580	20.7
Wyoming	275,000	95,140	34.6
Total	434,195,000	149,426,834	34.4

*Preliminary figures on estimated egg capacity of hatcheries, January 1, 1943, supplied by Agricultural Statistics Division, Bureau of Agricultural Economics, U. S. Department of Agriculture.

Table 3 -- Hatchery supply flock participation by States, 1942-43, in comparison with 1941-42, percentage increase or decrease in number of birds, and average number of birds in supply flock, 1942-43

State	Number of flocks		Number of birds		Percent		Average per flock
	1941-42	1942-43	1941-42	1942-43	increase or decrease	per	
Alabama	1,310	1,189	182,182	185,921	+ 2.1	156	
Arizona	167	278	43,517	52,131	+ 19.8	188	
Arkansas	1,641	1,049	245,854	159,650	- 35.1	152	
Colorado	987	780	173,197	155,954	- 10.0	200	
Connecticut	262	275	309,182	387,357	+ 25.3	1,409	
Delaware	234	234	82,725	103,634	+ 25.3	443	
Florida	307	367	100,228	128,524	+ 28.2	351	
Georgia	839	831	182,785	214,605	+ 17.4	258	
Idaho	401	412	83,516	80,217	- 4.1	195	
Illinois	7,192	8,122	1,211,961	1,462,964	+ 20.7	180	
Indiana	7,402	8,102	1,501,638	1,661,663	+ 10.7	205	
Iowa	4,010	3,341	920,603	838,380	- 9.0	251	
Kansas	2,814	2,774	561,946	617,661	+ 9.9	223	
Kentucky	3,012	3,105	339,751	372,045	+ 9.5	120	
Louisiana	1,176	1,152	90,233	98,205	+ 8.8	85	
Maine	407	565	472,282	469,498	- 0.6	831	
Maryland	1,325	1,368	396,464	392,251	- 1.6	287	
Massachusetts	459	329	560,117	473,740	- 15.4	1,440	
Michigan	734	804	199,577	235,489	+ 18.0	293	
Minnesota	2,553	3,316	747,570	1,074,193	+ 43.7	324	
Mississippi	725	754	74,382	77,504	+ 4.2	103	
Missouri	8,952	8,301	1,443,332	1,486,260	+ 3.0	179	
Nebraska	138	131	33,440	40,065	+ 19.8	306	
New Hampshire	563	554	923,667	993,667	+ 7.5	1,794	
New Jersey	631	590	265,195	305,589	+ 15.2	518	
New Mexico	34	33	7,929	8,768	+ 10.6	266	
New York	220	301	148,082	250,458	+ 69.1	832	
North Carolina	2,188	2,387	561,027	528,045	- 5.9	221	
North Dakota	858	976	124,338	158,512	+ 27.5	162	
Ohio	6,120	5,952	1,190,912	1,190,070	- 0.1	200	
Oklahoma	3,053	2,763	446,677	464,111	+ 3.9	168	
Oregon	19	18	23,686	22,230	- 6.1	1,235	
Rhode Island	34	44	53,327	38,826	- 27.2	882	
South Carolina	375	216	55,264	45,505	- 17.7	211	
South Dakota	880	930	190,190	216,864	+ 14.0	233	
Tennessee	2,407	2,160	237,717	246,316	+ 3.6	114	
Texas	1,435	1,193	264,039	224,987	- 14.8	189	
Utah	105	91	40,977	34,945	- 14.7	384	
Vermont	118	168	85,717	93,490	+ 9.1	556	
Virginia	1,780	1,522	507,133	473,437	- 6.6	311	
Washington	228	270	121,987	100,765	- 17.4	373	
West Virginia	662	865	93,543	113,096	+ 20.9	131	
Wisconsin	864	900	209,539	248,784	+ 18.7	276	
Wyoming	60	57	9,239	8,082	- 12.5	142	
Total	69,681	69,569	15,518,967	16,534,458	+ 6.5	238	

Table 4 -- Estimated percentages of eggs needed by participating hatcheries in each State supplied by participating flocks in that State

	:Egg capacity of participating hatcheries	:No. birds in participating flocks	:No. birds needed to supply participating hatcheries*	:Estimate of eggs for participating hatcheries supplied in State	Percent
Ala.	2,813,214	185,921	281,300		66
Ariz.	722,198	52,131	72,200		72
Ark.	2,016,434	159,650	201,600		79
Colo.	1,179,040	155,954	117,900		132
Conn.	4,190,986	387,357	419,100		92
Del.	383,000	103,634	38,300		270
Fla.	1,398,922	128,524	139,900		92
Ga.	4,458,088	214,605	445,800		48
Idaho	967,430	80,217	96,700		83
Ill.	13,340,465	1,462,964	1,334,000		110
Ind.	13,854,944	1,661,663	1,385,500		120
Iowa	6,399,080	838,380	639,900		131
Kans.	5,044,873	617,661	504,500		122
Ky.	3,064,338	372,045	306,400		121
La.	1,114,650	98,205	111,400		88
Maine	1,614,455	469,498	161,400		291
Md.	4,584,260	392,251	458,400		86
Mass.	2,886,431	473,740	288,600		164
Mich.	2,731,600	235,489	273,200		86
Minn.	12,099,972	1,074,193	1,210,000		89
Miss.	1,307,360	77,504	130,700		59
Mo.	7,075,180	1,486,260	707,500		210
Nebr.	545,300	40,065	54,500		74
N. H.	2,750,234	993,667	275,000		361
N. J.	3,838,712	305,589	383,900		80
N. Mex.	143,000	8,768	14,300		61
N. Y.	2,186,518	250,458	218,700		115
N. C.	5,241,340	528,045	524,100		101
N. D.	2,857,791	158,512	285,800		55
Ohio	11,756,421	1,190,070	1,175,600		101
Oklahoma	3,875,720	464,111	387,600		120
Oreg.	225,500	22,230	22,500		99
R. I.	219,092	38,826	21,900		177
S. C.	555,508	45,505	55,600		82
S. D.	2,490,876	216,864	249,100		87
Tenn.	2,154,900	246,316	215,500		114
Texas	5,167,997	224,987	516,800		44
Utah	311,852	34,945	31,200		112
Vt.	309,617	93,490	31,000		302
Va.	6,355,816	473,437	635,600		74
Wash.	1,107,700	100,765	110,800		91
W. Va.	1,191,300	113,096	119,100		95
Wis.	2,799,580	248,784	280,000		89
Wyo.	95,140	8,082	9,500		85
TOTAL	149,426,834	16,534,458	14,942,700		111

*Based on estimated 1000 birds needed to supply hatching eggs for 10,000 egg capacity.

Table 5 -- The use of males of improved breeding in hatchery supply flocks as reported by 23 States in schedules A & B, A. H. Form 519

State	Total number birds in supply flocks	Number of birds in U. S. Certified flocks	No. birds in U. S. Approved flocks						Percent of all birds in supply flocks mated to males of improved breeding.
			Mated with males from single male U. S. R. O. P. matings	Mated with males from U. S. R. O. P. Flock Matings	Mated with males from U. S. Certified Flocks	Mated with privately pedigreed males			
Ariz.	52,131	0	424	587	1,045	29,846	61.2		
Colo.	155,954	57,121	35,687	3,872	6,600	0	66.2		
Conn.	387,357	11,484	8,450	0	0	0	5.1		
Fla.	128,524	18,815	0	0	3,492	7,232	23.0		
Ga.	214,605	35,906	5,852	4,241	5,008	22,672	34.3		
Ill.	1,462,964	0	51,900	0	0	3,010	3.8		
Iowa	838,380	2,832	5,226	7,493	1,525	2,235	2.3		
Ky.	372,045	32,078	20,732	748	10,968	0	17.3		
Mich.	235,489	82,656	41,256	4,286	22,773	15,572	70.7		
Mo.	1,486,260	24,244	196,014	0	163,514	0	25.8		
Nebr.	40,065	11,012	—	0	5,175	1,044	43.0		
N. D.	158,512	12,050	—	—	36,615*	—	30.7*		
N. H.	993,667	28,898	23,374	0	0	8,220	6.1		
N. Mex.	8,768	3,065	1,132	0	771	672	64.3		
Okla.	464,111	21,058	30,788	4,103	14,151	1,795	15.5		
Oreg.	22,230	16,984	0	0	0	0	76.4		
S. D.	216,864	485	13,684	5,979	23,088	18,268	28.4		
Tenn.	246,316	17,048	10,395	1,440	3,813	4,046	14.9		
Utah	34,945	24,731	3,322	1,780	—	2,945	93.8		
Vt.	93,490	3,046	—	—	—	5,401	9.0		
Wash.	100,765	42,506	—	4,235	4,466	11,082	61.8		
Wis.	248,784	136,347	23,260	—	—	—	64.2		
Wyo.	8,082	2,265	—	0	351	0	32.4		
TOTAL	7,970,308	584,631	471,496	38,764	303,355	134,040	19.2		

* Estimated.

Table 6 -- Hatchery and hatchery supply flock participation by breeding stages and pullorum-control and eradication classes, 1942-43

Breeding stage and pullorum class	*Number of States		Hatcheries	Supply flocks		
			Number	Egg capacity	Flocks	Birds
U.S. Approved	8	156	9,201,574	2,302	521,125	
U.S. Approved, Pullorum-Tested	36	1,346	98,159,021	34,979	6,317,461	
U.S. Approved, Pullorum-Controlled	34	331	19,630,361	20,727	4,525,268	
U.S. Approved, Pullorum-Passed	18	38	1,169,073	3,901	730,648	
U.S. Approved, Pullorum-Clean	17	142	2,983,382	1,446	1,016,653	
U.S. Approved Stage Total	44	2,013	131,143,411	63,355	13,111,155	
U.S. Certified	3	23	522,132	277	110,399	
U.S. Certified, Pullorum-Tested	30	46	1,569,296	1,492	420,292	
U.S. Certified, Pullorum-Controlled	34	107	3,921,351	2,172	881,238	
U.S. Certified, Pullorum-Passed	14	20	267,612	276	57,579	
U.S. Certified, Pullorum-Clean	21	68	2,024,150	254	204,471	
U.S. Certified Stage Total	40	267	8,304,541	4,471	1,673,979	
No Breeding Stage						
U.S. Pullorum-Tested	2	9	442,980	32	23,553	
No Breeding Stage						
U.S. Pullorum-Controlled	3	10	1,080,700	235	124,614	
No Breeding Stage						
U.S. Pullorum-Passed	9	58	2,063,286	391	233,549	
No Breeding Stage						
U.S. Pullorum-Clean	9	375	6,391,916	1,085	1,367,608	
Total - U.S. Pullorum- Control & eradication only	10	452	9,978,882	1,743	1,749,324	
Total participation	44	2,729	149,426,834	69,569	16,534,458	

* Number of States that have one or more hatcheries or flocks participating in the breeding stage or pullorum class indicated.

Table 7 -- Hatchery and hatchery-supply flock participation by breeding stages, 1936-1943

U.S. Approved				Supply flocks				U.S. Verified				
Hatcheries		Capacity	Number	Birds		States	Number	Hatcheries		Capacity	Number	Supply flocks
1935-36	26	668	34,891,113	22,110	2,805,214	3	9	534,000	63	14,884		
1936-37	31	968	45,634,537	28,141	4,903,129							
1937-38	33	981	46,135,020	26,149	4,257,283	3	3	106,900	24	10,047		
1938-39	37	1,219	61,337,972	39,402	6,450,143	4	4	186,940	28	22,772		
1939-40	40	1,435	75,066,154	46,508	7,659,086	7	3	27,836	42	17,798		
1940-41	42	1,611	98,294,123	53,187	8,734,279	5	2	19,448	36	14,118		
1941-42	44	1,810	115,030,293	62,572	11,679,005	3	1	16,000	46	14,114		
1942-43	44	2,013	131,143,411	63,355	13,111,155							

U.S. Certified				Supply flocks				No breeding stage - U.S. Pullorum classes only				
Hatcheries		Capacity	Number	Birds		States	Number	Hatcheries		Capacity	Number	Supply flocks
1935-36	14	91	984,132	672	206,824	3	249	1,657,000	968	435,487		
1936-37	23	173	4,495,321	981	687,006	6	98	2,461,928	1,436	945,772		
1937-38	27	182	5,323,306	1,004	506,776	11	312	6,957,496	1,643	1,144,392		
1938-39	31	197	5,006,002	987	566,795	11	613	9,252,008	2,174	1,563,858		
1939-40	34	208	5,360,130	1,701	758,166	13	546	10,124,598	2,308	2,079,188		
1940-41	39	251	6,534,314	3,378	1,273,101	13	601	13,067,867	2,535	1,989,268		
1941-42	39	279	4,571	1,587,742	15	577	13,084,889	2,492	2,238,106			
1942-43	39	264	4,471	1,673,972	10	452	9,978,882	1,743	1,749,324			

Table 8 -- Hatchery and hatchery-supply flock participation, 1936-1943

Hatcheries			Supply flocks		
States*	Number	Capacity	Number	Birds	Avg.size
1935-36	34	1,017	38,066,000	23,813	3,522,409
1936-37	41	1,239	52,591,786	30,558	6,535,907
1937-38	42	1,478	60,523,222	28,820	5,948,498
1938-39	44	2,033	75,782,922	42,591	8,653,568
1939-40	44	2,192	90,578,718	50,559	10,714,238
1940-41	44	2,465	117,915,752	59,136	12,010,766
1941-42	44	2,667	135,742,179	69,681	15,518,967
1942-43	44	2,729	149,426,834	69,569	16,534,458

*Includes States participating in U.S.R.O.P. work.

Table 9 -- Number and percentage of hatchery supply birds in each pullorum class, 1936-1943

	PT	PCd	PP	PC	Total
1935-36					
Birds	1,746,751		48,771	257,577	2,053,159
Pct. of Total	85		2	13	100
1936-37					
Birds	3,051,051		613,741	552,941	4,217,733
Pct. of total	72		15	13	100
1937-38					
Birds	2,800,237		444,606	692,776	3,937,619
Pct. of total	71		11	18	100
1938-39					
Birds	5,184,120		607,143	980,768	6,772,031
Pct. of total	77		9	14	100
1939-40					
Birds	6,522,647		1,033,088	1,435,134	8,990,869
Pct. of total	73		11	16	100
1940-41					
Birds	7,878,480		1,121,180	1,528,286	10,527,946
Pct. of total	75		11	14	100
1941-42					
Birds	8,596,461	3,090,932	909,040	2,310,216	14,906,649
Pct. of total	58	21	6	15	100
1942-43					
Birds	6,758,383	5,531,120	1,021,776	2,588,732	15,900,011
Pct. of total	43	35	6	16	100

*Refers to birds, not to flocks.

Table 10 -- Testing methods used - 1937-38 to 1942-43

Year	Stained-antigen, rapid, whole-blood	Whole-blood and tube	Whole-blood and serum	Standard tube agglutination	Standard tube and serum	Rapid serum	All three approved methods	No official program
1937-38	21	3	1	7	0	3	2	4
1938-39	25	4	2	9	0	1	1	2
1939-40	27	4	0	9	0	2	0	2
1940-41	28	3	1	10	0	1	1	0
1941-42	27	5	1	8	1	0	2	0
1942-43	27	5	0	9	0	0	3	0

Table 11 -- U.S. Record of Performance participation by States, 1942-43

State	U.S.R.O.P.										
	Number of breeders		Number of flocks		Birds on farm		Birds entered fall, '42		Birds qualified fall, '42		Breeding pens
	of breeders	of flocks	of farms	of fall, '42	on farm	entered fall, '42	qualified fall, '42	Pens	Females		
Alabama	23	31	11,271	3,238		1,248		108		1,245	
Arizona	3	4	415	104		57		12		82	
Arkansas	4	7	2,029	1,149		174		15		187	
Colorado	3	3	4,638	2,589		684		26		439	
Connecticut	7	10	20,154	3,878		1,345		155		1,706	
Delaware	2	3	5,900	1,450		248		19		250	
Florida	3	4	16,557	2,868		889		31		333	
Georgia	8	11	9,681	2,864		930		69		911	
Idaho	2	2	1,292	1,292		429		21		255	
Illinois	9	13	9,760	3,426		56		82		56	
Indiana	14	23	76,435	15,711		4,632		322		4,947	
Iowa	6	16	10,535	5,027		1,435		94		1,034	
Kansas	10	16	7,418	5,570		1,252		112		1,549	
Kentucky	5	6	4,099	1,011		340		37		467	
Louisiana	8	9	966	590		65		14		199	
Maryland	7	8	7,010	2,220		549		37		579	
Massachusetts	16	18	71,500	13,720		5,277		247		3,282	
Michigan	11	21	13,954	6,102		2,032		158		2,227	
Minnesota	9	11	26,992	9,427		3,560		185		3,513	
Mississippi	2	2	5,255	3,125		663		27		595	
Missouri	15	21	6,720	5,353		834		151		1,926	
Nebraska	5	6	8,900	1,348		332		21		398	
New Hampshire	12	15	53,276	5,425		2,838		158		2,147	
New Jersey	12	16	15,842	2,644		600		65		870	
New Mexico	1	2	750			21		2		11	
New York	6	6	15,800	2,461		776		64		937	
North Carolina	15	20	32,018	4,750		1,283		102		1,348	
North Dakota	2	2	349	326		54		9		110	
Ohio	17	19	28,267	7,818		3,014		179		3,057	
Oklahoma	6	7	2,570	1,527		744		63		777	
Oregon	6	6	9,882	4,911		3,278		99		1,788	
South Carolina	11	13	11,395	3,560		1,357		100		1,068	
South Dakota	1	3	355	314		---		---		---	
Tennessee	5	10	2,938	1,364		---		9		93	
Texas	12	14	10,241	8,849		3,169		71		1,496	
Utah	5	6	13,975	1,935		626		34		532	
Vermont	3	5	6,146	1,123		195		22		212	
Virginia	11	11	13,118	2,871		1,561		75		998	
Washington	6	7	8,250	1,332		1,345		58		844	
West Virginia	5	7	3,389	1,708		590		37		515	
Wisconsin	16	19	26,556	6,143		2,123		167		2,931	
Wyoming	2	2	573	562		55		4		50	
TOTAL	326	435	577,171	151,685		50,660		3,261		45,964	

Table 12 -- U.S. Record of Performance participation by breeds and varieties, 1942-43

Breed and variety	No. of flocks	on farm	Pullets entered fall, '42	Birds fall, '42	Birds fall, '42	U.S.R.O.P.		Males & leg-banded
						breeding pens	inspected	
						Pens	Females banded	
Single Comb White Leghorns	177	320,194	77,615	29,026	1,566	25,291	73,212	
New Hampshires	69	81,323	17,454	4,691	309	3,877	8,482	
White Plymouth Rocks	59	34,788	18,120	4,255	405	4,908	9,430	
Rhode Island Reds	53	93,803	20,390	7,735	485	6,310	11,150	
Barred Plymouth Rocks	53	42,655	14,455	4,349	407	4,573	7,141	
White Wyandottes	10	2,657	2,123	378	54	635	1,669	
Black Australorps	3	522	492	67	6	65	136	
White Minorcas	2	400	207	65	12	136	380	
Lamchas	2	170	170	18	3	21	20	
Buff Orpingtons	2	119	119	30	5	39	115	
Rhode Island Whites	1	200	200	43	8	96	34	
Buff Plymouth Rocks	1	145	145	3	1	13	46	
Black Minorcas	1	92	92	0	0	0	0	
Light Brahmans	1	56	56	0	0	0	0	
Buff Minorcas	1	47	47	0	0	0	0	
TOTAL	435	577,171	151,685	50,660	3,261	45,964	111,815	

Table 13 -- U.S. Record of Performance participation by years

	States	Breeders	Flocks	Female		Qualified		USROP		
				entered	candidates	Females	Pct.	Males	Pens	matings
1935-36	21	*	190	66,547	*	*	*	*	*	*
1936-37	31	301	352	112,202	*	*	*	*	1,675	22,322
1937-38	33	298	353	108,183	32,920	30.4	*	1,966	26,135	
1938-39	36	317	396	124,937	34,634	27.7	*	2,206	30,081	
1939-40	41	335	429	144,447	42,858	29.7	53,069	2,429	32,949	
1940-41	42	335	445	154,969	47,493	30.6	83,955	2,749	38,957	
1941-42	40	317	425	160,022	50,660	31.7	98,499	2,999	42,841	
1942-43	42	326	435	151,685	*	*	111,815	3,261	45,964	

* Information not available.

Table 14 -- Distribution of U.S.R.O.P. flocks according to
the number of candidates

Number of candidates	1941-42		1942-43	
	Number flocks	Percent	Number flocks	Percent
None	22	5.2	15	3.4
1 - 50	41	9.6	53	12.2
50 - 99	33	7.8	37	8.5
100 - 199	66	15.5	75	17.2
200 - 299	67	15.8	70	16.1
300 - 399	61	14.4	66	15.2
400 - 499	39	9.2	31	7.1
500 - 599	24	5.6	29	6.7
600 - 699	24	5.6	16	3.7
700 - 999	21	4.9	22	5.1
1000 - 1999	19	4.5	14	3.2
2000 +	8	1.9	7	1.6
TOTAL	425		435	

Table 15 -- Distribution of U.S.R.O.P. flocks according to
the number of breeding pens

Number of breeding pens	1941-42 flocks		1942-43 flocks	
	Number	Percent of total	Number	Percent of total
0	73	17.2	58	13.3
1	43	10.1	32	7.4
2	27	6.4	34	7.8
3	25	5.9	22	5.1
4	28	6.6	32	7.3
5	20	4.7	23	5.3
6	38	8.9	37	8.5
7	19	4.5	14	3.2
8	24	5.7	40	9.2
9	15	3.5	13	3.0
10	24	5.6	36	8.3
11	15	3.5	17	3.9
12	18	4.2	20	4.6
13	12	2.8	10	2.3
14	9	2.1	8	1.8
15 to 19	13	3.1	15	3.4
20 to 29	12	2.8	12	2.8
30 to 39	4	.9	6	1.4
40 +	6	1.4	6	1.4
TOTAL	425		435	

Table 16 -- A comparison of the number of days each week trap-nesting is performed

Amount of trap-nesting in home U.S.R.O.P.	BREEDERS			FLOCKS		
	: Percent		: Percent		: Percent	
	: of all breeders		: of breeders		: of flocks	
	Number	: breeders	: trapping	Number	: flock	: trapped
Laying test only	27	: 8.3	:	40	: 9.2	:
Supervision only	12	: 3.7	:	15	: 3.4	:
5-day trapping	94	: 28.8	: 32.7	126	: 29.0	: 33.2
6-day trapping	10	: 3.1	: 3.5	13	: 3.0	: 3.4
7-day trapping	183	: 56.1	: 63.8	241	: 55.4	: 63.4
TOTAL	326	: 100.0	: 100.0	435	: 100.0	: 100.0

Table 17 -- The number of U.S.R.O.M. sires and dams
by breeds and varieties

Breed and variety	1938-39		1939-40		1940-41		1941-42	
	Sires	Dams	Sires	Dams	Sires	Dams	Sires	Dams
Single-Comb White Leghorns	129	670	161	921	251	1,438	285	1,672
Single-Comb Rhode Island Reds	15	73	4	59	28	156	45	279
New Hampshires	5	34	15	88	27	143	49	291
Barred Plymouth Rocks	3	13	8	62	18	95	17	96
White Plymouth Rocks	3	19	1	15	13	78	21	131
White Wyandottes			2	6		2	3	11
White Minorcas				2		3		3
Rhode Island Whites						4		
TOTAL	155	809	191	1,153	337	1,919	420	2,483

Table 18 -- Summary of U. S. Register of Merit analysis
for the 1941-42 trap-nest record year

State	Reports sub-	Reports sub-	Number			
	mitted (pedigreed candidates)	mitted (non- pedigreed candidates)	breeders with U.S.R.O.M.	Number birds		
	Breeders	Flocks	Breeders	Flocks	Sires	Dams
Arizona	1	2	1	1	0	2
Arkansas	1	1	1	1	1	5
Colorado	2	2	1	1	2	50
Connecticut	7	10	1	1	8	85
Delaware	2	3	1	1	0	2
Florida	3	3	1	1	6	46
Georgia	5	7	1	2	2	12
Idaho	1	1	1	1	10	44
Indiana	3	3	1	1	50	258
Iowa	6	16	1	1	19	125
Kansas	3	3	1	1	0	33
Kentucky	2	2	1	1	0	3
Maryland	3	3	1	1	2	14
Massachusetts	3	3	1	1	25	141
Michigan	2	2	1	1	4	22
Minnesota	3	3	1	1	3	163
Missouri	12	12	2	5	4	6
New Hampshire	10	13	1	1	12	216
New Jersey	3	4	1	1	4	15
New Mexico	1	2	1	1	0	0
New York	4	4	1	2	4	50
North Carolina	4	5	1	1	5	67
North Dakota	1	1	3	3	0	2
Ohio	16	18	1	1	13	203
Oklahoma	7	8	1	1	4	34
Oregon	6	6	1	1	6	300
South Carolina	9	12	3	4	6	57
Texas	5	6	4	4	6	240
Utah	4	5	1	1	3	42
Vermont	2	3	2	2	0	0
Virginia	7	7	2	2	6	83
Washington	7	7	2	2	7	101
West Virginia	2	3	2	2	4	31
Wyoming	1	1	1	1	1	1
TOTAL	148	181	24	32	121	420
						2,483

Table 19 -- Hen-housed average egg production of birds entered in U.S.R.O.P., 1941-42 trap-nest record year

Breed and variety	No. pedigree candidates	Average egg production	No. daughters	Average egg production	No. daughters	Daughters of U.S.R.O.M. sires	Daughters of U.S.R.O.M. dams
S.C.W.L.	39,218	181	22,051	202	16,381	210	
N. Hamp.	8,446	174	3,299	198	2,957	205	
B.P. Rock	4,000	167	909	192	822	200	
S.C.R.I.R.	7,634	179	3,128	196	2,837	204	
W.P. Rock	5,247	153	1,351	168	1,367	180	
W. Wyan.	632	134	---	---	22	208	
Other	506	147	---	---	19	199	
Total- 1941-42	65,683	176	30,738	199	24,455	207	
Total- 1940-41	59,600	171	25,178	198	19,592	207	
Total- 1939-40	44,972	164	12,797	197	10,977	206	

